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B. T. Simms

United States Department of Agriculture

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Activities Of The Bureau Of Animal Industry

Dr. B. T. Simms, Chief of Bureau of Animal
Industry, United States Department
of Agriculture.

The Bureau of Animal Industry employs approximately 1,750 veterinarians for the performance of many kinds of services in administrative, research, and regulatory fields. By act of Congress, the Chief of the Bureau is required to be a veterinarian, and Federal veterinary inspectors must be graduates of veterinary colleges accredited by the Bureau, as maintaining courses of study in line with the requirements of the Bureau's work.

The administrative and research work directed or conducted by Bureau veterinarians includes scientific investigations of the cause, prevention, and treatment of diseases of domestic animals, poultry, and fur animals raised in captivity. Among the maladies that have received prominent attention in recent years are tuberculosis, brucellosis, rabies, equine sleeping sickness, fowl paralysis, pullorum disease, Newcastle disease, coccidiosis, and trichomoniasis.

Research is conducted also on the prevention of livestock losses caused by poisonous plants, as well as on parasitic diseases and the effect of drugs on host animals and their parasites. Other experimental work of the Bureau deals with the breeding and feeding of domestic animals, including poultry, rabbits, and fur animals raised in captivity, and with improving the quality and usefulness of their products. Though largely in the field of animal husbandry, those projects also have some veterinary aspects.

A number of regulatory acts are administered by the Bureau including the Federal Meat Inspection Act, the animal

quarantine acts, the 28-Hour Law, the diseased animal transportation acts, and the Virus-Serum-Toxin Act. The Bureau issues certificates of pure breeding for acceptable breeding animals offered for importation. Veterinarians occupy key positions at animal quarantine stations and other field stations that deal with inspection and quarantine operations.

The divisions of the Bureau which require the services of considerable numbers of veterinarians are: Animal Foods, Inspection and Quarantine, Interstate Inspection, Meat Inspection, Pathological, Tuberculosis Eradication, Virus-Serum Control, and Zoological. Brief outlines of the work of these divisions are given.

The Animal Foods Inspection Division provides an inspection and certification service over the preparation of wet canned foods for dogs, cats, and other carnivorous animals when manufacturers request this service. A nutritional standard has been established for these foods. During the fiscal year 1948 the service was carried on in 25 plants, processing 277,861,352 lbs. of such food.

The Inspection and Quarantine Division administers regulations for preventing the introduction and dissemination of livestock diseases of foreign origin and the inspection, humane treatment, and safe transport of animals for export. At present this Division, through employees assigned to service in Mexico, is cooperating with Mexican authorities in combating an outbreak of aphthous fever in that country.

The Interstate Inspection Division supervises activities involving the inter-

state movement of livestock; enforcement of the 28-Hour Law and animal quarantine laws; eradication of cattle fever ticks, now in final stages of completion; and special cases of livestock disease.

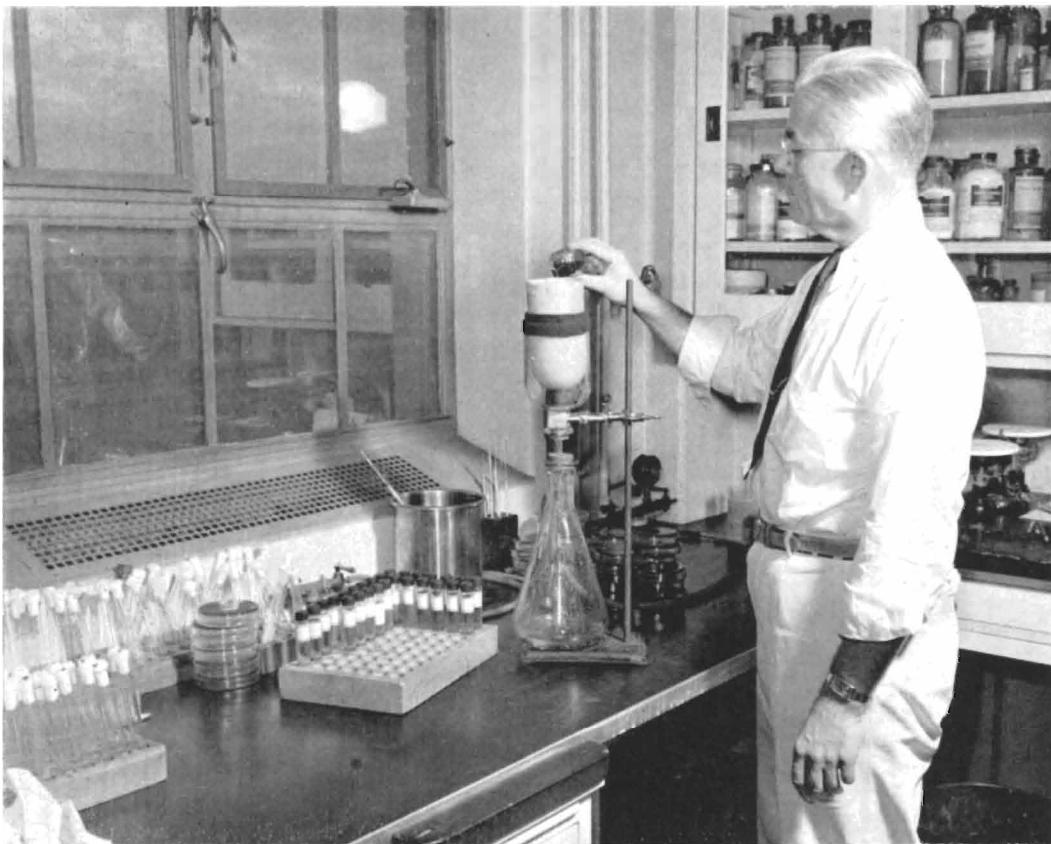
In one phase of this Division's work, during the last fiscal year, 22 veterinarians assigned to the investigation and control of outbreaks of hog cholera and related swine diseases made 39,437 farm inspections and consulted with farmers, veterinarians, and State officials on preventive and control measures. In their field work, the veterinarians continued to emphasize the importance of better sanitation and early and correct diagnosis of diseases.

The Meat Inspection Division is responsible for the administration of the Federal meat inspection laws and regulations dealing with the wholesomeness of meat and

meat food products moving in interstate and foreign commerce. Sanitation in accordance with advanced principles of meat hygiene is required.

A large number of the veterinarians employed by the Bureau of Animal Industry are veterinary inspectors in the Federal Meat Inspection Service, one of the largest units of the Bureau. It conducts numerous types of inspection to insure the wholesomeness of meat and meat food products. The inspection applies to the slaughter and processing of cattle, sheep, swine, goats, and horses, and to food products derived from them, intended for interstate or foreign commerce.

At the end of the last fiscal year, 449 slaughtering establishments and 441 establishments engaged in meat processing were operating under Federal meat inspection. One or more veterinarians are



U.S.D.A. Photo

Veterinarian in laboratory of Animal Disease Station of Bureau of Animal Industry. He is concentrating *Staphylococcus* toxin by ultrafiltration in the preparation of toxoid.



U.S.D.A. Photo

Federal veterinary meat inspectors, working at moving-top viscera inspection table. Every carcass whose viscera show signs of any pathological or other unfit condition is identified by a "U.S. RETAINED" tag and segregated for a closer examination.

assigned for duty at each slaughter house. Animals are inspected before and at the time of slaughter and the meat food products are further inspected through different stages of preparation, labeling, and packing.

The Pathological Division conducts research on non-parasitic diseases of livestock to develop improved diagnostic and control methods; prepares tuberculin, mallein, standard antigen, vaccine, and other material for field use; conducts investigations of livestock poisoning by plants; and examines various cultures, viruses, serums, biological products, alleged remedies, and other material.

During the last year a new antibiotic, subtilin, was tested to determine its efficacy in treating mastitis. Bacteria responsible for the majority of cases of mastitis are inhibited or killed by subtilin, and tests in actual cases of the disease are in progress.

The Tuberculosis Eradication Division directs the control and eradication from livestock, of tuberculosis, brucellosis, and Johne's disease, in cooperation with states, counties, and livestock owners. Herds must be continually retested to insure early detection and removal of any infection that may have developed. Assistance in detecting sources of infection is given by the meat inspection service through reports of lesions disclosed on post-mortem examination.

The Division of Virus-Serum Control supervises the preparation, in licensed establishments, of biological products intended for treatment of domestic animals; and administers the regulations prohibiting the distribution of worthless, harmful, or contaminated veterinary biologics. On June 30, 1948, such supervision was being given at 66 licensed establishments.

The Zoological Division conducts research on parasites and parasitic diseases

of livestock; and conducts experiments with drugs and chemicals to determine their use for the destruction of external and internal parasites.

One instance of research conducted during the last year was work to discover improved methods for treating sheep for scabies. Bureau investigators found that one dipping in cold-water suspensions of wettable benzene hexachloride removed all live mites. In most instances the skin of the treated sheep returned to normal healthy color and texture, and new wool covered the formerly denuded areas. Benzene hexachloride has several advantages over remedies formerly used for scabies in sheep.



U.S.D.A. Photo

Veterinarian engaged in foot-and mouth disease eradication work, during one of the few outbreaks that occurred in the United States. The animal is being led to slaughter.

Some work of veterinarians in the Bureau of Animal Industry is of special or emergency character. For instance, when an outbreak of aphthous fever occurred in Mexico late in 1946, experienced veterinarians of the Bureau were sent to Mexico at the invitation of Mexi-

can officials, to render assistance. This disease is disastrous to the livestock industry, not so much because of death losses, but because it spreads so rapidly and so often leaves its victims in poor condition for meat and milk production.

When early surveys showed the disease to have spread widely and indicated that eradication work would be an extensive undertaking, more veterinarians and other trained specialists were dispatched to help Mexican authorities cope with the situation. The Bureau issues periodic reports, available to interested persons, on the control and eradication effort which is still in progress.

Several Bureau veterinarians, skilled in research work, also were temporarily assigned to foot-and-mouth disease laboratories in England, Denmark, The Netherlands, and Switzerland, to become familiar with research methods, and the production of vaccine. Another veterinarian was sent to Mexico and South America to confer with scientists on the production and testing of foot-and-mouth disease vaccines. The information obtained through the cooperation of foreign scientists is being used in Mexico in the vaccine-production program which is one phase of the control and eradication work. Legislation was enacted by Congress in April, 1948, authorizing the Department to conduct research on the disease, under proper safeguards.

Scientists of the Bureau of Animal Industry have made notable discoveries which have contributed not only to the protection and improvement of livestock, but also to the advancement of medical knowledge.

Present methods of controlling malaria, yellow fever and Rocky Mountain spotted fever, based upon discoveries made by 3 Bureau scientists in their work on tick fever of cattle in the South. Their studies showed that a disease-producing organism can be transmitted by an intermediate carrier. In tick fever the infective micro-organism was found to be a protozoan parasite which attacks and destroys the erythrocytes and the carrier of this infective agent was the cattle fever tick.

Based on this discovery, many methods of controlling human diseases have been devised.

Other accomplishments by Bureau and cooperating veterinarians are the control and eradication of tuberculosis in cattle, control of hog cholera, the organization and development of the Federal meat inspection service to its present high degree of efficiency in safeguarding consumers against contaminated meat.

Bureau veterinarians have also developed improved methods of preventing and controlling numerous livestock parasites and parasitic diseases. Among the more important achievements in this field are the sanitation systems of controlling roundworms and kidney worms in swine; the discovery of carbon tetrachloride and tetrachlorethylene as effective remedies for hookworm disease in susceptible animals, including man; of phenothiazine for the removal of important worm parasites of several species of animals; of barium antimonyl tartrate for the removal of gapeworms from poultry, the standardization of many anthelmintic treatments in use the world over; and the formulation of satisfactory procedures for controlling trichinosis and tapeworm infections of man.

Besides engaging in the types of activities described, veterinarians of the Bureau frequently perform such varied duties as writing bulletins and scientific papers, addressing public meetings, speaking over the radio, consulting with state and local officials, and participating in the solution of the many new problems that are constantly arising.

The Bureau of Animal Industry is constantly in need of more well-trained veterinary personnel. The Federal Government does not direct the work of veterinary colleges, but in order to be qualified to take a Civil Service examination for a position of veterinary inspector in the Bureau, a graduate must have taken certain courses in an approved veterinary college. Thus the Bureau promotes a demand for the services of veterinarians, and keeps high the standards of the profession in training and efficiency.

Purebred Imports

During the year of 1947, more purebred livestock entered the United States for breeding purposes than in any previous one. The importations, which exceed those of previous years by 39 percent, were made under the tariff act of 1930, which provides that purebred animals for breeding purposes may enter the United States free of duty if accompanied by papers that give satisfactory evidence of their pure breeding. The result has been to encourage the introduction of high quality foundation stock, leading sometimes to new breeds or types and the general improvement of domestic animals in the United States.

New Anthelmintic

The Bureau of Animal Industry has reported that toluene (methyl benzene) has shown promise as a new anthelmintic for dogs, chickens and pigs. In experiments it removed all the ascarids from 2 dogs, 99 percent of the hookworms from 4 dogs and 75 percent of the whipworms from 6 dogs. It has also proven effective in removal of ascarids in pigs and large roundworms of chickens.

Fowl Cholera

Forty adult turkeys were exposed to a deadly dose of the germs of fowl cholera. Thirty were treated at once, and twice daily for two days with sulfamerazine. Ten of the turkeys received no treatment. All of the treated birds recovered, and all of the untreated birds died.

Some of the treated turkeys suffered a recurrence of the disease later, but losses ceased when the drug was administered again.

Experiments have shown that it is possible to transmit bovine venereal trichomoniasis by artificial insemination with semen taken from a known infected bull.